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The Personality of Stutterers

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THE PERSONALITY OF STUTTERERS

CHAPTER I

THE PROBLEM

INTRODUCTION

STUTTERERS have been studied extensively neurologically and psychologically by Travis, Orton, Bringleston, and others (20). Valuable information has been obtained pertaining to the objective measurement of their breathing and voice patterns, muscle tensions, reflexes, brain waves, and handedness. Other workers, such as Blanton (3), Coriat (6), Fletcher (8), and Johnson (13, 14), have studied them from the clinical and psychiatric points of view. All of these authorities agree that stuttering in its later stages exists as a handicapping influence upon the personality.

The occurrence of the spasm of stuttering causes the patient greater social anxiety than he would otherwise experience; this anxiety, in turn, makes the speech less efficient; and as soon as he becomes oppressed by the potency of this vicious cycle, a definite psychoneurosis develops (22, p. 63).

The objective testing of the personality of stutterers has been hampered because of the fact that adequate tests have not been available (44). Those used heretofore have been principally paper and pencil tests such as: the Woodworth-Cady, Woodworth-Matthews questionnaires, and the Kent-Rosanoff association test which McDowell used in her study on child stutterers (17). The Woodworth-House Mental Hygiene Inventory was used by Johnson (14) in a study of adult male stutterers, and Bender has made a more recent study of college male stutterers using the Bernreuter Personality Inventory (2, 27). These instruments are limited in scope in that they do not

achieve a measurement of the whole personality, which is something more than a sum of traits. What has been needed is a qualitative type of test which would reveal the personality as an organized whole. Two such tests, which are believed to fulfill this requirement, are the Rorschach Ink-blot and the Murray Thematic Apperception Tests. Although there is much research still to be done on the last mentioned instruments in order to render them more adequate for objective measurement of the whole personality, they have already been used extensively and with a measure of success in clinics and psychopathic hospitals (24, 31, 39, 42, 43, 59).

These so-called projection tests have had limited use in the measurement of the personality of stutterers. Meltzer (44) made a study of adolescent stutterers in which he used the Rorschach Ink-blot Test.

PURPOSE OF THE STUDY

The purpose in this study has been to investigate the difference between the personality of adult stutterers and non-stutterers by means of a questionnaire and two projection-type personality tests. The specific problems for solution have been:

1. Do adult stutterers as a group differ from non-stutterers in such personality traits as: social introversion, thinking introversion, depression, cycloid tendencies, and rathymia or happy-go-lucky attitudes as measured by the Guilford Inventory of Factors S T D C R?
2. Is the structure of the personality, including the potential forces and ten-

sions within, different in adult stutterers and non-stutterers as revealed by the Rorschach Ink-blot Test?

3. Do adult stutterers differ from non-stutterers from the point of view of the dynamic content of their personality, i.e., their needs, frustrations, and attitudes as revealed by the Thematic Apperception Test?

4. Of what value is this type of approach in the treatment of adult stutterers?

IMPORTANCE OF THE STUDY

There is still much to be learned about the stutterer's personality. The observations which prompted this study are: (a) previous researches on stutterers' personality have been limited either to the questionnaire or projection-type of test. Therefore, a study in which both types would be used seemed practical for bringing about a more inclusive and detailed picture of their personality; (b) since the adult stutterer realizes more forcefully the social significance of handicapped speech than does the child with the similar handicap, and since it is more difficult to relieve the adult of his stuttering, any further information concerning his personality is to be desired by the speech correctionist and clinical psychologist.

SCOPE OF THE INVESTIGATION

The subjects for this study were thirty stutterers: eight women and twenty-two men. They were members of a speech correction class at the Psychology Clinic at the University of Southern California. The age range was 17 to 48 years, the average age being 27.8 years. A control group of thirty non-stutterers was matched for age (plus or minus five years), sex, decile rating on the Henmon-

Nelson Tests of Mental Ability, Form A, and college experience.

The testing of the stutterers extended over a period of nine months. Testing and the evaluation of results of both groups covered a period of some fifteen months.

Four tests were given each individual: the Henmon-Nelson Tests of Mental Ability, Form A, the Guilford Inventory of Factors S T D C R, the Rorschach Ink-blot Test, and the Murray Thematic Apperception Test. These were administered by the same examiner, i.e., the investigator. The normal speakers and stutterers were selected from such sources as business and professional groups, the industries and trades, the armed forces, high school, college, and university students.

The results of this study have been interpreted in terms of the personality patterns they purport to reveal, the results of the two groups have been compared, and an attempt has been made to determine the significance of the differences between them.

LIMITATIONS OF THE STUDY

There are limitations in such an investigation which pertain to the tests themselves.

The Questionnaire-Type Test

Among the criticisms leveled at personality inventories such as the Guilford Inventory of Factors S T D C R are:

There is opportunity for the subject to distort the results by answering in the manner he knows to be desirable rather than in terms of how he actually acts.

The subject is forced to react in one specific manner in order that these differences may be measured as accurately as possible.

The observer is deprived, to a large extent, of the possibility of discovering how and why the subject arrived at a particular result.

The validity of such an inventory can only be estimated, i.e., to what extent the instrument measures what it is designed to measure is not known.

The subject is in most instances only partially able to say to what extent information secured from such a test represents a true picture of his personality.

The Projection-Type Test

The limitations of such tests as the Rorschach Ink-blot and the Thematic Apperception Tests are obvious.

Although they present a so-called "total-action" picture of the personality, they offer little opportunity for the objective evaluation of their results. To be objective a test must yield results which can be measured or counted and which will enable experimenters of experience and skill to arrive at similar results. Although in the last ten years there has been much improvement in the administration and scoring of the results of the Rorschach Ink-blot Test, only in its administration has objectivity been employed (40).

The most serious limitation of the Thematic Apperception Test is that the results do not yield material from which attitudes and complexes are readily determined (48).

There are limitations pertaining to the

sampling in this study. The comparatively small number of subjects in the experimental and the control group, thirty in each, constitutes another inherent weakness. However, in the experiment there are some twelve hundred stories in the Thematic Apperception and over twenty-nine hundred responses in the Rorschach Ink-blot Test to be evaluated. This quantity of responses tends to negate some of the weakness due to small sampling.

ORGANIZATION OF THE STUDY

The remainder of this report consists of the following chapters:

In Chapter II is found a discussion of the tests used for the investigation of the personality of stutterers. A short historical background is given and the characteristics of the tests are discussed.

In Chapter III a summary of related studies of child, adolescent, and adult stutterers is presented.

Chapter IV gives the procedure in administration and evaluation of the tests used in this investigation.

Chapter V includes a case study of one of the girl stutterers. Results of her tests are presented and evaluated and synthesized into a unit insofar as these varied tests are amenable to synthesis.

Chapter VI includes the result of the experiment.

Chapter VII presents the summary and conclusions.

CHAPTER II

DISCUSSION OF THE TESTS USED IN THIS STUDY

HISTORY AND CHARACTERISTICS

THE TESTS selected for this research were chosen because they fulfilled requirements essential to a study of adult stutterers.

The Henmon-Nelson Tests of Mental Ability

These tests, primarily designed to predict and measure aptitude for college success, are group tests requiring one-half hour for their administration. Form A was used in this study. The ninety items involved are arranged in order of increasing difficulty.

These tests have a correlation of $.79 \pm .03$ between their scores and those of the Otis Self-Administering Tests of Mental Ability, Higher Examination, Form A. The correlation with the American Council Psychological Examination, 1931 edition, is $.77 \pm .03$.

The reliability between forms A and B is moderately high, with a correlation of $.89 \pm .01$. These correlations are sufficiently high to merit the use of this mental test in a study of late adolescent and adult stutterers, the majority of whom had graduated from high school or had had college training.

An Inventory of Factors S T D C R

The history of instruments of the questionnaire type for the study of personality traits began when Woodworth (in 1917) endeavored to find a method of diagnosing men's ability to adjust themselves to the emotional strains of army life. His test items have been utilized by most of the subsequent investigators in this field.

Jung's theory of psychological types has influenced the development of the questionnaire for the measurement of introversion-extroversion (2, pp. 59-62). The Inventory of Factors S T D C R is one in this category. When Guilford used Thurstone's method of factor analysis on a list of eighty-nine items in personality questionnaires, which were prepared for the purpose of indicating more clearly the primary traits or

dimensions of extroversion and introversion, nine primary factors were found. Seven were identified as referring to depression, rathymia (happy-go-lucky attitudes), shyness, thinking, liking for thinking and problem solving, and alertness. Significant correlations between factors D (depression), S (social introversion), and T (thinking introversion) were found and are thought to underlie the common conception of introversion-extroversion (29).

These factors taken together probably cover the area of personality generally encompassed by the concept of introversion-extroversion. The reliability of an inventory of this type can only be estimated. Guilford combined alternate sixths of the items into two pools of approximately equal lists and used the Spearman-Brown formula, which yielded the estimated reliability of .92, .89, .91, .91, and .89 for factors S T D C R, respectively, in a population of two hundred (one hundred men and one hundred women) selected at random from the criterion group. In an entirely new group of one hundred (fifty men and fifty women) similarly estimated reliabilities were: .90, .84, .94, .88, and .90 respectively. The scale is based upon so called normal individuals. The factors S T D C R indicate social introversion, thinking introversion, depression, cycloid tendencies, and rathymia.

As to correlations among the scores, factorial studies revealed some positive correlations among factors S, T, and D ranging in the neighborhood of .50. A small negative correlation between factors D and R was also indicated. Scorings may be significantly correlated even when the factors are not, due to the fact that the scorings cannot be pure indicators of traits.

Although personality questionnaires of this type have encountered criticism such as those listed in the previous chapter, they have been widely used. The Inventory of Factors S T D C R has been carefully devised on the basis of factor analysis and thus appears to merit being used in such a study as this where the purpose is to determine whether stutterers (as opposed to non-stutterers) as a

group reveal introvertive-extrovertive tendencies.

The Rorschach Ink-blot Test

Klopfer and Kelley (15, pp. 13-14) explain the development of projection tests as follows:

Out of the need to bridge the gap between the merely subjective "understanding" of another personality gained through clinical observation, and the objective measuring of individual differences with little or no understanding of their origin or deeper meaning, there developed a new approach which may be described . . . by the term "projective methods of personality diagnosis."

The difference between the Rorschach method and other projective techniques using visual stimulus material and verbal reactions, lies chiefly in the degree to which the material has some objective meaning which it tends to impose upon the subject. A projective technique using material which is more structured than the Rorschach material is Murray's "Thematic Apperception Test." The use of picture material in this test, instead of less meaningful ink blots, shifts the emphasis from the way of handling the situation to the imaginative content. This picture content is naturally rather elusive with regard to objective comparison and more under the influence of conscious control. In this respect the "Thematic Apperception Test" is more similar to Jung's free-association technique than to the Rorschach method.

The Rorschach's background lies in the typology of Jung, Kretschmer, and Jaensch rather than in the psychometry of Thorndike, Terman, and May (56). The Rorschach method pertains more to the structure of personality than to behavior. It relates to potential forces and tensions within the person (59).

In the "projective techniques" it is assumed that the mental procedure which the individual adopts and the emotional reactions he displays in experimental situations operate similarly when he meets other life situations. Thus, in reacting to the test he is giving a sampling of his characteristic behavior. The examiner reconstructs the personality of the subject from his projected attitudes (37).

Justinus Kerner of Germany first used the ink-blot as psychological material in 1857. It

was none other than Binet of France who, in 1859, suggested the use of ink-blots for the study of personality traits in which differing responses would be elicited from differing personalities.

Herman Rorschach, a psychiatrist of Zurich, gave this particular type of stimulus material its greatest impetus. He was not influenced by Binet, however. He used the blots for ten years in his psychopathic hospital and carefully matched the patient's replies against their observed characteristics (41). In 1921 he published his findings in *Psychodiagnostik* (19). He elaborated and standardized the ink-blots, and showed a variety of ways in which the subjects' responses could be evaluated. There were 405 subjects: 231 were men, 174 women, 117 "normal" (39). He was interested in four approaches the subjects made in their responses to the ink-blots: the mode or manner or apperception, the quality lying behind the response, the content, and the originality. Klopfer and Kelley (15, p. 221) summarize his principles:

The general psychological assumptions made in Rorschach interpretation are so few and simple that nobody will have any compunction about accepting them. Thus, it is assumed that the actions and reactions of human beings are stimulated or prompted both from without and from within. The stimulation from without has never been doubted. It seems equally clear that most psychologists agree in assuming that promptings from within form a working part of actual life.

One object of Rorschach interpretation is to discover the role which the different areas of stimulation play in the life of a subject, their strength, and their importance in his general life situation. In this sense, and in this sense only, does the Rorschach terminology distinguish between people who are predominantly prompted from within (introverts) and people who are prompted from without (extraverts).

Rorschach claimed he found differential response patterns from his various clinical cases. He published norms for normals and psychotics. His death, soon after the publication of his findings, placed the responsibility for furthering the study upon his colleagues Oberholzer, Loosli-Usteri, and Loepfe, who carried on the work on the continent. Vernon, in England, has contributed

a great deal to the movement. In America, have been David Levy, Samuel Beck, Bruno Klopfer, Douglas Kelley, Marguerite Hertz, and others. In 1936 the Rorschach Exchange, which has been influential in gaining strong support for the movement in this country, was established.

During the last ten years much improvement has been made in the administration and scoring of the test. A group test has been devised in which the ink-blot is projected upon a screen (33). This was a result of the need for a large-scale application of the Rorschach method as a device for the selection of personnel in the armed forces.

This test has been widely used in researches on juvenile delinquents and adult criminals, in studies of epileptics, stutterers, alcoholics, twins, and in anthropological field studies (15, p. 9). It has been validated clinically and has been used to identify children who are potential asylum and clinical cases, mental defectives, neurotics, and psychopaths. Innumerable investigators have maintained that as a clinical instrument it is valuable in diagnosing inhibitions, excessive fantasy living, inferiority feelings, and mental conflicts (39).

The Thematic Apperception Test

This test is a part of the trend of the past twenty years for the development of methods in the investigation of personality through projection methods. Murray, and his colleagues at Harvard, have made a personality study of fifty college men over a period of five years (18). They used some sixteen methods for investigating personality such as: ink-blot, art work, music, and pictures. The Thematic Apperception Test, in which a series of pictures is administered, was one of the tests used in this experiment. Since the original series, two revisions have been made. Murray's first test contained twenty pictures fairly obvious in their portrayal of action. After further research, he re-edited his pictures and produced a set more indefinite in content and bizarre in treatment.

The first revision, which is the one used in this study, consists of thirty pictures. The first ten are shown to both sexes. Following the tenth picture the male subjects are shown pictures M 11 to M 20, and female subjects pictures F 11 to F 20. When children are examined, pictures 7, 8, 10, and F 11 are

omitted. A brief description of the pictures follows (64):

Pictures for both sexes

1. A young boy contemplating a violin which rests on a table in front of him.
2. An elderly woman standing on the threshold of a half-opened door looking into a room.
3. A gaunt man with clenched hands standing among gravestones.
4. The silhouette of a man's figure against a bright window. The rest of the picture is totally dark.
5. A young woman's head against a man's shoulder.
6. A road skirting a deep chasm between high cliffs. On the road in the distance are dim shapes. Protruding from this rocky wall on one side is the long head and neck of a mythological dragon.
7. A dimly defined enlargement of a thumb showing part of the nail. There is a dark spot on the skin.
8. Two nude standing figures of a young man and woman. The woman rests her head on the man's shoulder. Beside them stands a draped woman with a baby in her arms.
9. Two chairs beside a tea table.
10. An outline drawing of the head of an old bearded man with another old man apparently sitting cross-legged on his shoulders. In the background is the outline of a splintered tree.

Pictures for male subjects

M 11. A short elderly woman stands with her back to a tall young man. The latter is looking downward with a perplexed expression, his hat in his hands.

M 12. A man helplessly clutched from behind by two hands, one on each of his shoulders. The figure of the antagonist is invisible.

M 13. On the floor against a couch is the huddled form of a boy with his head bowed in his right arm. Beside him on the floor is an object which resembles a revolver.

M 14. A young man lying on the couch with his eyes closed. Sitting beside the couch is an elderly man leaning forward with one hand raised above the forehead of the reclining figure.

M 15. A gray-haired man is looking at a

young man who is sullenly staring into space.

M 16. A dimly indicated figure of a man clinging to a rope. He is in the act of climbing up or down.

M 17. A figure is seated at a table with head in his arms. Behind him are the dim forms of large bats and owls.

M 18. A young man fully clothed, lying face downward on a bed.

M 19. A dim, cadaverous figure with his back against a wall. Both arms are upraised.

M 20. A gaunt, poorly dressed and dishevelled man stands behind and to the right of a well dressed, prosperous-looking man.

Pictures for female subjects

F 11. The portrait of a young woman. The head of an old woman with a shawl over her head appears behind the young woman.

F 12. A bridge over water. A female figure leans over the bridge. In the background are tall buildings and small figures of men.

F 13. A young boy is seated at a table with an open book before him. Behind him stand two little girls.

F 14. A young man leaning toward a young woman who has her head turned away from him with an expression of refusal.

F 15. A young woman is standing with downcast head, her face covered with her hand. The other hand is placed against a wooden wall.

F 16. The face and figure of a bearded man reflected in a mirror.

F 17. A young woman with her hands squeezed around the throat of another woman half fallen below her.

F 18. A young servant girl looking backwards through a door.

F 19. A young man in dishevelled clothes standing beside a table on which stands a bottle. Behind him is the figure of a woman lying in bed.

F 20. An aged man with a white beard seated at a table with his head bowed and his hand over his eyes.

In 1935 Morgan and Murray (45) published the first article setting forth their theory. They believed the patients taking the test revealed unwilling and unconscious trends. The test is based upon the probability that when a person interprets an ambiguous social situation he is apt to ex-

pose his own personality as much as the phenomenon to which he is attending. The interpretations are guided by the theories of Freud, Jung, Adler, Lewin, and McDougall (18). Since 1938 this test has been used clinically in the study of psychotic and neurotic patients. Rotter's (48) study of the validity of the test with mentally disordered patients revealed the technique to be economical in furthering an understanding of the individual's personality problems. These stories were checked against case histories and clinical diagnoses and the comparison revealed a high degree of accuracy in deducing biographical material and attitudes. The test has revealed latent homosexual drives, deep-seated sibling rivalries, mother fixations, repressed guilt, and important traumas (48).

ADMINISTRATION, SCORING, AND INTERPRETATION

The authors of the mental test and the personality questionnaire used in this study have constructed them in such a manner that they are administered, scored, and interpreted with a minimum of effort. The two projection tests require a longer time to administer, and the scoring and interpretation required a relatively detailed procedure which will be explained in the following pages.

The Henmon-Nelson Tests of Mental Ability

This test is administered according to directions in the manual (63). The subject must use a pencil for marking and is told to do the three practice exercises at the top right hand side of the first page so that he may see how to do the test. A cross is marked in one of the five squares which has the number corresponding to what is considered the right answer. If a mistake is made, the subject draws a circle around the wrong answer and makes a cross in the correct square. The subject is given one half hour to answer as many questions as possible. The Clapp-Young Self-Marking Device eliminates the necessity of using a scoring key.

The raw score is changed into percentile norms for each college year. These norms are based upon scores made by 5,500 students

in colleges and universities in different parts of the United States. The percentiles are changed into decile ratings, the first decile being the lowest and the tenth the highest.

An Inventory of Factors S T D C R

The 175 items in this questionnaire are answered by encircling either "Yes," "?," or "No." The individual is asked to read each question, think what his behavior has usually been, and then draw a circle around the answer that best describes his behavior. The "?" is encircled only when he cannot decide between the "Yes" and "No." Since there is no implication of right and wrong in any of the questions, the individual is asked to answer every one.

The results are scored according to a "key" and the raw score is changed into percentile ratings for each of the five factors. The range from the fortieth to sixtieth percentile is considered within the normal range based upon the norms of 388 University of Nebraska students. An individual having a percentile of fifteen in the S (social introversion) factor would not be considered socially introverted. A rating at the ninetieth percentile in this factor would place the individual in the socially introverted group. The range from the fortieth to the first percentile indicates a decreasing amount of the trait, while the range from the sixtieth to the ninety-ninth indicates an increasing amount.

The Rorschach Ink-blot Test

This test consists of a standard series of ten ink-blot pictures which serve as the stimulus material for the subject. They are reproduced on cards seven by nine and one-half inches, the cards being numbered from one to ten.

In the administration of this test the examiner sat beside the subject, where both could see the card, but far enough removed from him so that it was impossible for him to see what the examiner wrote. The examiner prefaced the test with such remarks as: "You have probably seen pictures in clouds, have you not? I am going to show you a series of ink-blot, and will you tell me what you see in them? First, you look at the blot right side up, then turn it to the right, then upside down, then to the right again. In that way you will have viewed it from all four sides."

There was no time limit given. Rorschach gave unlimited time; Lopfe limits the subject to seven responses per blot; Hertz limits the time to two minutes per blot, not including instruction time and discussion (35).

Each response was written and numbered for each ink-blot. Positions of the card were recorded by the "V" in different positions.

If the area used by the subject was reasonably clear, the examiner marked it on the Location Chart by drawing a line around the response area and marking this line with the corresponding number of the response, either by writing the number on the line or by connecting the number with this line. If the location was uncertain, the subject was asked to point out on the card the area designated. Any spontaneous elaborations and explanations were also recorded.

After the original responses were recorded, inquiry about determinants was made. Leading questions were avoided. The most usual was: "What in the blot made you think of . . . ?" These inquiry responses were elicited after each card was finished. In this manner the forgetting of the exact locations and the reason why the response was made was eliminated. Some examiners wait until all ten cards are finished before making the inquiry. Inquiry responses were also recorded.

In this research the time element was not considered significant. The time between the first showing of the card and the first response and the total time for the responses for each card was taken but there were no noticeably long or short intervals. The free association tests influenced Rorschach's including the time element, but in this test Wells (58) found short or long times had no constant significance.

An attempt has been made to score the results found in these interviews similar to those methods used by Klopfer and Kelley (15). Scoring was done in three categories to answer the questions:

1. Where does the subject see what he sees?
2. How does he see what he sees, or what elements other than location determine the formation of the concept?
3. What content is in the response?

Responses are classed respectively under the headings: Location, Determinant, and Content.

The following is a general interpretation

of the major scoring categories of the Rorschach Test:

Location

W—emphasis upon the general abstract forms of thinking.

D—first grade normal detail, emphasis upon the obvious, recognition of the problems of everyday life.

d—second grade normal detail, critical capacity, emphasis upon the less obvious, detailed.

Dd—emphasis upon the unusual detail.

S—oppositional tendencies, self-willed.

Content

A—indicative of narrow range of interest, stereotypy. In normals it increases with intrapsychic inhibition and decreases with breadth of culture and education.

H—an interest in self and in others.

Determinants

M—imaginative activity, inner activity going on, indicator of creative powers, inner promptings. Few M's appear in individuals inhibited by self-consciousness, critical control of thoughts, or by depression.

FM—indicates a normal stage in the growth of inner life not yet fully developed, emotionally infantile.

m—indicates an underdevelopment or repression of inner life. Sometimes m indicates the subject's regarding his promptings from within as hostile and uncontrolled forces working upon him rather than as sources of energy at his disposal.

k—covered anxiety.

K—free-floating anxiety, insecurity, chaotic state of inner life.

FK—controlled anxiety, tendency to introspection, insight.

F—conscious controlled reactions, emphasis upon pure outline responses.

Fc—"tact," controlled awareness of happenings in the environment.

c—depressive tendencies.

C'—"burnt child" reaction. Basically responsive to environment outside but cautious because of traumas, or artistic impressionability.

FC—indicate degree of emotional adjustment to outer reality, controlled sensuality, friendliness.

CF—more impulsive emotional reactions than FC, excitability, sensitivity.

C—readiness to respond to stimuli from without, capacity for intense emotional experience, impulsivity, a helpless exposure to emotional stimuli.

Further details of the scoring and interpretation of the Rorschach Ink-blot Test are given in Beck (1), Bochner and Halpern (4), and Klopfer and Kelley (15).

The Thematic Apperception Test

In the administering of this test the subject is seated in a chair located so that he can not see what the examiner writes. The test is prefaced by remarks from the examiner: "I am going to show you some pictures. About each one you are to tell what led up to the situation shown in the picture. Then tell what is happening now, how the people feel, and how the story will end. You are to use your imagination as much as possible."

When the instructions are clear, the subject is handed the first picture and a record is made of everything he says. If he omits any of the antecedent circumstances or the ending, he is reminded to add these. If he asks assistance of any sort in constructing the stories, the examiner merely tells him to do as he chooses.

Since there are twenty pictures in the series, and since some individuals are more productive in their story telling than are others, it is often necessary to give only half the pictures at one sitting.

Analysis of the stories

There are several possible methods of analyzing the stories told in the Thematic Apperception Test. Language content, organization, word choice, reactions to others, and attitudes of the individual are only a few of the approaches one can make. However, in this investigation the principal intent has been to determine the dynamic content of the stories and to analyze them for expression of the basic needs of the leading character, his reactions to frustration, his attitude toward his environment, the adequacy of the central character, and how the story ends. Murray and his assistants have acted upon the hypothesis that from the needs and situations shown in the fantasies one can infer that the story-teller has projected his own strivings and attitudes into

the characters of the story. The hero is assumed to be the story-teller himself. The forces acting upon the hero may be reflections of the way the teller perceives and imagines his environment. The manner in which the hero solves his conflicts is purported to reveal the subject's desires or attitudes towards solving his own problems.

There has been a *départure* in this study from the method Murray uses in analyzing the stories of the Thematic Apperception Test. The changes will be indicated as each category is discussed.

There is no change in the method for determining the principal character. Since needs are manifested in the behavior of the hero of a story, it is necessary to determine just which character is the principal one. Usually, the one about whom the plot is constructed, the one who appears at the beginning and the end, the one whose reactions are more dramatically described, is the hero. In cases where there are two or more dominant ones, that actor who is most similar to the story-teller as to age and sex and whose inner motives are best understood and portrayed is assumed to be the leading character. If the identification is still uncertain in the estimation of the examiner, the story-teller may be asked to indicate which one is the most important character.

In determining the needs of the principal character, this study differs in some respects from Murray's procedure. He includes needs under the term "thema." "To state a 'thema' means to state the press or situation to which a person is exposed and the way he reacts to it" (64, p. 16). In this investigation there has been an analysis for "needs" and a separate one for "reactions to frustrations." The categories for "needs" are five of the six listed by Travis and Baruch (21): achievement, affection, belongingness, recognition, and sensory gratification. The need for response which they listed has been included under need for recognition in this study.

In many of the fantasies there was indication that the leading character was struggling with obstacles of both a physical and psychological nature. He manifested various types of behavior when he was frustrated. These reactions have been categorized under the following concepts: abasement, aggression, ambivalence, anxiety, compensation, conversion, escape, fear, identification, in-

sanity, introjection, rationalization, reaction formation, regression, repression, and sublimation.

Murray's concept of the "thema" includes a variety of categories which are readily reducible to fewer terms. The most significant ones have been selected and incorporated into this study. It is obvious that there is an overlapping of terms in the categories listed under "reactions to frustrations" and "themas," but this breaking down of Murray's double concept in his "thema," which includes both "needs" and "reactions to frustrations," has placed more emphasis upon each category. As this study is arranged, the observation as to whether the hero was manifesting a need or a reaction to a frustration is easily discernible.

The "themas" included in this investigation are: abasement, achievement, acquisition, affiliation, aggression, autonomy, blame-avoidance, blamescape, deference, dominance, excitement, exhibition, harmavoidance, inviolacy, nurturance, nurturance, passivity, play, recognition, rejection, seclusion, sentience, sex, and succorance.

Murray includes a category which he calls "attitude toward parents and siblings." Since this research has been made upon adults, the concept was broadened to include attitudes of the individual toward society as well. These attitudes pertain to such forces of the environment as: (a) the environment dominates, (b) it is friendless, (c) harmful, (d) helpful, (e) loving, (f) monotonous, (g) mysterious, (h) it punishes, (i) recognizes, (j) it is submissive and allows the hero an opportunity to control it, (k) it is thwarting, (l) it is undesirable and is rejected by the hero, (m) and it requires that one work in order to achieve desirable results in life.

The adequacy of the principal character is one of the analyses made by Murray and is also made in this study. It is important to discern whether the hero is competent or not. Usually, there is a consistency which indicates a certain helplessness or self-sufficiency of the individual telling the stories. Sometimes there is adequacy only after help has been received from the outside.

Endings may be satisfactory for the hero or they may end in futility. Sometimes society does not approve of behavior that might be entirely satisfactory to the hero in the story. For example, a story ending in

suicide might be very satisfactory to the hero, but society does not condone it. Thus, the ending would be classed as unsatisfactory. Neither does society condone abandoning a wife for a younger woman. This would also be classed as an unsatisfactory ending even though the hero would be considered adequate in satisfying his needs for affection or autonomy.

This description of the tests used in the present investigation, their characteristics, historical background, and method of administration, scoring, and interpretation, has been purposely included at the fore part of this study in order to acquaint the reader with the terminology of the various tests.

CHAPTER III

REVIEW OF RELATED RESEARCHES

IN RECENT YEARS there has been widespread interest in the problem of stuttering as is shown by the growth of speech correction classes and clinics. Travis maintains that the speech correctionist should not study stuttering but instead should study stutterers. Speech is a reflection of the personality of the speaker. Any research that elucidates the problems pertaining to the stutterer's personality is thus helpful. When specific problems are revealed, speech correctionists and clinicians are better able to approach them therapeutically.

Records of researches upon the stutterer's personality as measured by personality tests are not numerous. McDowell (17) made a study of sixty-one stuttering children in 1928. Several tests designed to yield a more thorough understanding of the nature of stutterers were given. The mean I.Q. on the Stanford Binet Mental Test Scale was 99.14, S.D. 20.3. The ratio of boys to girls was 2.2 : 1, and they were matched by a control group for C.A., M.A., I.Q., sex, language, and racial background. The personality tests used were the Woodworth-Matthews and Woodworth-Cady Questionnaires, and the Kent-Rosanoff Free Association Test.

The findings showed that the stuttering and control groups were very similar in emotional readjustments as measured by the Woodworth-Matthews and Woodworth-Cady Tests. In the Kent-Rosanoff Test there was no significant difference between stutterers and non-stutterers in reaction time or in quality of responses (17, p. 49).

Johnson (14) made a study of fifty adolescent and adult stutterers in which he used the Woodworth-House Mental Hygiene Inventory. This test is designed to indicate maladjustments of personality in both Childhood and Maturity (House's categories). For purposes of standardization, House used four hundred normal male college and university students and seventy males diagnosed as psychoneurotics. Thus the inventory diag-

nosed both normal and psychoneurotic tendencies.

Of the fifty stutterers thirty-two were college and university students or graduates, nine were high school graduates, four had not gone to high school, one had taken night school work and another a special business course. The age range was from fifteen to thirty-four, with an average of 21.5 years. The ratio of male to female was 39 : 11.

Johnson's purpose was to compare stutterers with non-stutterers in regard to personality maladjustments in Childhood and Maturity. For a special purpose he divided the fifty stutterers into two groups: (a) the fifty per cent who scored twenty-two or above on the Maturity section of the inventory (relatively maladjusted) and (b) the fifty per cent who scored twenty-two or below (relatively well-adjusted). A comparison was made of these two groups (14, p. 77).

Johnson's findings were as follows: (a) the mean scores indicate that there are insignificant differences between stutterers and non-stutterers with regard to personality maladjustment in both Childhood and Maturity; (b) in both Childhood and Maturity the stutterers differed significantly from psychoneurotics. They resembled normal non-stutterers more than they did non-stuttering psychoneurotics; (c) the stutterers as a group represented relatively normal adjustment; (d) half the stutterers were extremely well-adjusted; (e) on the Maturity part of the inventory stutterers scored significantly lower than the psychoneurotics; (f) in Childhood there was not a real difference between stutterers and non-stutterers who were normal on the basis of the percentage of problems that were extreme; the psychoneurotics had significantly more extreme problems in Childhood than did the stutterers; (g) in Maturity these stutterers had significantly more extreme problems than the normals, but less extreme problems than did the psychoneurotics.

Johnson concluded that his data were suggestive of three trends:

(1) that stutterers in general are far from being psychoneurotic; (2) that many of their

personality problems are to be accounted for in large measure by reference to the restraining and humiliating aspects of stuttering; and (3) that because of (1) and (2) the burden of proof must rest with those who support the theory that stuttering is, or is not a symptom of social and emotional maladjustment (14, p. 92).

A study using the questionnaire type of test was made by Bender (2, 27) on 249 college male stutterers matched with 303 non-stuttering students. The age range for stutterers was fourteen to twenty-three, the average age being seventeen years two months. The age range for non-stutterers was fourteen years five months to twenty-four years five months, with a mean age of seventeen years. Bender aimed to answer two questions (27, p. 140):

Because authoritative statements frequently mention that stuttering is closely associated with personality maladjustment, the writer posed two questions for study, Do post-pubertal, male stutterers have more disturbances of personality than non-stutterers? Are post-pubertal, male stutterers afflicted characteristically with certain specific peculiarities of personality?

Some of the reasons why he selected college male stutterers were: (a) they were approaching maturity; (b) stuttering may be called a "male disability;" (c) on the whole, they are free from the determining influences that vocations may have on personality; (d) they come largely from the same cultural area; (e) they represent a type of intelligence that has succeeded in dealing with abstractions; (f) they have stuttered long enough to realize the social significance of speech handicaps.

Bender used the Bernreuter Personality Inventory which purports to measure six personality traits, namely: neurotic tendency, self-sufficiency, introversion, dominance-submission, confidence in self, and sociability. His findings indicate that in relation to non-stutterers (a) stutterers score significantly higher in neurotic tendencies; (b) they are more introverted; (c) they are less dominant; (d) they are less confident of themselves; (e) they are less sociable. The scores on self-sufficiency do not differ significantly. Bender concludes (27, pp. 145-146):

At the college level, stutterers because of

their many common backgrounds of experiences, are likely to have certain characteristic traits of personality or temperament, that is, a "stuttering personality."

The two previously mentioned studies utilized the pencil and paper type of personality test. Another study of stutterers made by Meltzer in which a projection type test was used. He had a two-fold purpose in his study (44, p. 264):

(1) To investigate the nature and extent of personality differences in a group of stuttering children by the use of an instrument for investigating personality which seems more promising for this purpose than other tests previously used; (2) to help develop reliable and valid Rorschach norms for a large variety of psychosocial groups by working up norms for a stuttering group and investigating the relevance and extent of reliability of generalizations made on the basis of previous studies.

Meltzer used the Rorschach Ink-blot Test because it is in accord with the idea that personality is more than a sum of traits; that is, that it is an organized whole.

The sampling utilized involved sixty-four children from speech centers of a large school system, fourteen girls and fifty boys. The average was eleven to twelve, the mean I.Q. 96.6, S.D. 1.9. Comparisons were made with a control group of fifty non-stutterers equated for age, grade, intelligence, and economic status. The usual method of administration of the test was used. Several workers administered it but Meltzer evaluated the responses in the light of the Rorschach literature. His results are as follows:

Characteristic Approaches

(a) Stuttering children manifest associational mental activity, as evaluated by W's, on a par with the lower end of the norms given by Rorschach for superiors.

(b) Productivity as evidenced by the total responses, R, was above Rorschach's norm given for individuals of average intelligence.

(c) Stuttering children are not lacking in concrete mindedness as indicated by variations of D responses.

(d) The DS responses which Rorschach maintained were indicative of resistiveness and negativism were in accord with actual

behavior records which Meltzer had available.

Quality of Responses

(a) Stutterers give twice as many M's as Beck's feeble-minded group.

(b) Their C responses fall below the range given by Rorschach for superiors.

(c) They give as many F's as superiors.

(d) Those giving the largest chiaroscuro or shading responses fitted in with the Rorschach design of absorption in the far away and tendency to depression. This was substantiated by the behavior records.

Content of Responses

(a) The content is in accord with the norms for average individuals as reported by Rorschach.

(b) The A's correlate $.09 \pm .08$ with M.A. and $.41 \pm .08$ with R.

Meltzer concludes from his data that stutterers are characterized by fairly rich inner lives, relatively superior capacity to perceive forms accurately but not indiscriminately, and that they do not lead restricted inner lives. To the small extent that neuroticism is suggested, it takes what may be called an "expressive" rather than a "repressive" form. Concerning his statistical findings, the investigator maintains that the many zero scores obtained in most of the Rorschach items result in unbalanced distributions which render ineffective the use of any measure of central tendency (averages) and variability.

SUMMARY

A review of the foregoing studies reveals inconclusive results in some respects. McDowell's, Johnson's, and Meltzer's studies are based upon a small sampling of stutterers which, as has been mentioned in Chapter I, is a weakness in this type of research on personality. Bender's sampling of college male stutterers is sufficiently large, but this sampling of college students does not represent a cross-section of the stuttering population. His findings could scarcely be comparable with other studies where there is less selected sampling.

In a questionnaire study such as McDowell's there is some doubt as to whether children are sufficiently able to introspect and understand the meaning of the questions asked. In the Kent-Rosanoff Free Association Test the time span between stimulus word and response is considered important. In the case of stutterers, the results would be of doubtful value because of the speech blocks involved.

Johnson's and McDowell's studies agree in that during childhood there are insignificant differences between stutterers and non-stutterers. Johnson's and Bender's studies disagree to some extent in respect to neuroticism. Johnson found stutterers to resemble normal non-stutterers more than they do non-stuttering psychoneurotics. Bender found college male stutterers to be more neurotic than non-stutterers. This discrepancy perhaps is due to differences in the tests used and the interpretation. Although the stutterers in Johnson's study resembled normal non-stutterers more than they did psychoneurotics, they showed some neuroticism in having a greater proportion of extreme problems than do the normals. He found that they have such personality problems as shyness, anxiety, depression, nervous instability and that they believe themselves to be unsatisfactorily adjusted to life. These tendencies are in agreement with Bender's findings that stutterers are less sociable, less dominant, more introverted, and less confident of themselves than non-stutterers.

In Meltzer's study the stutterers were evaluated in terms of Rorschach's norms, Beck's feeble-minded group, and clinical evidence. From the intellectual standpoint, as evidenced by W (wholes), R (total responses), and F (form), they were compatible with the 96.6 I.Q. they received on the intelligence test.

Since Meltzer's findings are not summarized in terms of one scale, either Rorschach's, or Beck's, or clinical evidence, a comparison with findings on the questionnaire studies of stutterers is

not easily made. Meltzer uses the term, "to the small extent that neuroticism is expressed," indicating an agreement with McDowell and Johnson that stutterers are neurotic to some degree.

CHAPTER IV

EXPERIMENTAL PROCEDURE

IN THE present investigation of the personality of adult stutterers as revealed by three personality tests, two of which were projection tests, the intensive study of a comparatively small group was deemed imperative because of the length of time required for the administration and evaluation of the tests. Thirty adult stutterers, twenty-two men and eight women, and the same number of non-stutterers were examined. The stutterers had come for speech correction to the Psychological Clinic at The University of Southern California. There was no selection of certain stutterers from this group. Each was given the tests as a part of the clinic procedure.

The occupations represented, and the number of persons in each, for both the stuttering and control group, are indicated in Table 1.

TABLE 1
Occupational groupings of stutterers and non-stutterers

	Stutterers	Non-stutterers
Armed forces	1	6
Business	5	8
Farming	1	0
House-keeping	1	0
Professional	2	3
Student groups	6	7
Trades	10	6
Unskilled	4	0

The stutterers and the control group were matched person for person for age, sex, and college experience. There was group matching for decile rating on the Henmon-Nelson Test of Mental Ability. The decile ratings were arranged in groupings of two: 1-2, 3-4, 5-6, 7-8, 9-10. The person, for example, who had a rating of sixth decile could be matched

by an individual who had a rating of fifth, sixth, or seventh decile.

Each individual received a decile rating on the Henmon-Nelson Test of Mental Ability. The mean and standard deviation of decile rating for the group was taken. Since this was one of the controlled factors, the mean for both stutterers and non-stutterers is the same. The four tests were administered in both the experimental and control groups according to the specifications set forth in Chapter II. The average time required to administer the four tests was approximately three hours per person.

The means, standard deviations, standard errors of the means, and critical ratios of the raw scores on the Inventory of Factors S T D C R were taken. The means for each category were changed into percentile ratings and a comparison of the stutterers and non-stutterers made.

The Rorschach Ink-blot Test results have been statistically treated by both the method of averages and the method of comparison of proportions of responses. Those categories which had a distribution range too small and zero scores too large to merit measurement in terms of means, medians, standard deviations, and critical ratios have been discussed in terms of their range and zero scores.

In the Thematic Apperception Test each story was analyzed and a value of one point was given for every attitude expressed. A group total was taken for each of the categories under needs, reactions to frustrations, themes, attitude towards environment, adequacy, and endings. The stutterers and non-stutterers were compared on the basis of percentage of response for each category,

standard error of the percentage differences and the critical ratio was determined in order to check on significant differences. Other features in the stories, such as situations where death had occurred, violent deaths, and suicides, were analyzed for proportionate differences in the stuttering and the control group.

The tests were administered and independently analyzed of any knowledge of clinical histories of the subjects so that the interpretations would be unbiased by previous knowledge. At the same time the tests were being given by the experimenter, members of an advanced Clinical Psychology class were interviewing some of the stutterers individually. Each class member was assigned a stutterer. At the end of five months the case studies of some ten or twelve of the stutterers were compared with results of the personality tests. There was significant agreement in the findings of the two approaches.

In this study no attempt was made to arrive at a validation or a measurement of the reliability of the results of either the Rorschach Ink-blot Test or the Thematic Apperception Tests. However, the consistency of the investigator in the evaluation of the stories of the Thematic Apperception Test was checked by the following procedure:

(a) Ten of the best pictures were selected which had been found to elicit stories of varied content. These stories were numbers one, five, six, and eight from the ten general pictures for both male and female, numbers eleven, thirteen, and sixteen for males, and numbers eleven, fourteen, and fifteen for females.

(b) The numbers were put upon squares of paper and mixed up. A number was drawn and recorded, then replaced in the pile. This procedure was followed until sixty numbers were recorded in the proportions of thirty-two

for both male and female, twenty-one for male, and seven for female pictures. These proportions were selected because of the fact that there were more male stutterers than female.

(c) One story for each of the sixty individuals was evaluated at least four months after the first evaluations in order to eliminate the memory factor. The name of the one who had told the story and whether he was a stutterer or non-stutterer was unknown to the investigator. Only the sex of the teller was known. This procedure eliminated prejudices or preconceived opinions the investigator may have had concerning the various individuals. These new evaluations were recorded and compared with the original evaluations.

A comparison was made to check the agreement between the investigator's analyses and those of another clinician. The same sixty representative stories were evaluated by the co-worker and the results compared with those of the investigator. Table 2 gives the comparative

TABLE 2

Percentage of times there was agreement in evaluation of a sampling of thematic apperception test stories

	Investigator vs. Investigator	Investigator vs. Clinician
Main character	98.4	96.7
Needs	83.4	80.0
Frustrations	75.0	80.0
Thema	86.7	78.0
Environment attitudes	93.4	85.0
Adequacy	95.0	75.0
Ending	96.7	85.0

information. The table indicates a fairly high agreement in the story evaluations. For example, the percentage of 98.4 in the first column shows that the investigator was more consistent in determining the "main character" than in any of the other categories. The investigator agreed

more with the clinician in determining the "reactions to frustrations" than she did with herself, as is shown by the percentages of 80.0 versus 75.0.

Interpretations of the stories in the Thematic Apperception Test have been based upon the interpretations of Murray (18) and upon the dynamics, mechanisms, and reactions to frustrations as given by Travis and Baruch (21). Whenever certain stories contained ambiguous material as to needs, manifestations of frustrations and the various categories evaluated in the test, no attempt was made to guess at these. All such responses were omitted from the interpretation. The quantity of stories amenable to anal-

ysis was sufficient to enable the investigator to arrive at conclusions which would negate the few ambiguous stories.

Since the directions for scoring and interpretation of the Rorschach Ink-blot Test are more explicit than are those for the Thematic Apperception Test, it was not considered necessary to make a check upon agreement of the investigator with her own evaluations or those of another clinician. The interpretations have been based upon the latest findings as given by Klopfer and Kelley (15), Beck (1), Hertz (34), and Bochner and Halpern (4). A sustained attempt has been made to be consistent in the evaluations in both the projection tests.

CHAPTER V

AN EVALUATION OF EVALYN'S PERSONALITY

A STUDY of an individual's personality by means of tests is most valuable when the results of all of them are synthesized into a unit. All of the stutterers in this study have been members of the Psychology Clinic class for speech correction at the University of Southern California. Some seventeen or eighteen of the thirty have been studied clinically and case histories are available.

At the time this study was made, various members of an advanced class in clinical psychology were interviewing these stutterers. The author made a "blind diagnosis" of the results of the Rorschach Ink-blot and Thematic Apperceptive Tests. The findings were then compared with the clinical findings, and the two were significantly similar.

The personality diagnosis of one of the girl stutterers follows. The name Evalyn is fictitious.

Age: seventeen.

Year in college: freshman.

Mental ability: first decile on Henmon-Nelson Test of Mental Ability.

THE INVENTORY OF FACTORS S T D C R; RESULTS

Social introversion—thirty-fifth percentile.

Thinking introversion—third percentile.

Depression—thirty-eighth percentile.

Cycloid tendencies—thirty-fifth percentile.

Rhathymia—thirty-eighth percentile.

The range between the fortieth and sixtieth percentiles includes the normal distribution in this inventory. Evalyn is below this distribution in all of the factors. Her lowest percentile is for think-

ing introversion, which indicates she would not be considered a "profound" thinker. She is not concerned over the motives of others or thinking on abstract subjects, or engaging in meditative thinking.

Interpretation

Her extrovertive, or happy-go-lucky, tendency as exemplified by the R factor, slightly exceeds her social introversion, the S factor. The R factor is exactly balanced by her depression (D) factor, which indicates she is as much "down" as "up" in her moods. The cycloid (C), or mood-swing tendency, is in accord with her D and R. Her inventory indicates that she is not as happy-go-lucky as the average person; neither is she as cycloid or depressed or as socially introvertive.

THE RORSCHACH INK-BLOT TEST RESULTS

Characteristic approach:

Category	Number of Responses	Percentage
W	5	6.3
D	29	36.7
d	29	36.7
Dd + S	16	20.2

Quality of responses:

Category	Number of Responses	Percentage
M	1	
FM	1	
m	0	
k	1	
K	1	
FK	2	
F	57	72.2
Fc	2	
c	0	
C'	1	

FC	8
CF	4
C	1

Sum C = 9.5

M : sum C = 1 : 9.5

(Fm + m) : (Fc + c + C') = 2 : 3

Content of responses:

A% = 22.8

H% = 8.8

Interpretation

Intellectual aspects of the personality as shown by the Rorschach. Evalyn's total of seventy-nine responses is in excess of the twenty to fifty responses for the average person, as indicated by Bochner and Halpern (4). Her rating on the Henmon-Nelson does not class her as extremely brilliant. Usually, productivity of responses indicates brilliancy (Kelley, p. 208). However, occasionally those with artistic ability produce many responses. Clinical findings show her to be talented dramatically.

Evalyn's 6.3 per cent of W (whole) responses are considerably below the percentages of W's, twenty-five to thirty, for normals. She would not be considered an abstract thinker. The Henmon-Nelson score substantiates this.

Her responses for D and d, seventy-three per cent, slightly exceed the fifty to sixty-six per cent for the average person. She has common sense enough to use the most obvious material before starting to seek the unusual.

The average person has ten per cent of less unusual details (Dd and S). Evalyn's 20.2 per cent indicates she is interested somewhat in the unimportant and detailed. Having only three S responses, she would not be considered obstinate.

A percentage of 72.2 F or form responses indicates constriction with com-

pulsive elements (15, p. 234), and normal average intelligence.

Emotional aspects of the personality as shown by the Rorschach. Evalyn would be classed as an extrovert with few introvertive tendencies. The ratio of 1 M : 9.5 sum C indicates this. She is sensitive to outside stimuli, but the predominance of FC's over CF or C means that she has her emotional reactions to outer reality under control. In fact, seventy-four out of the seventy-nine responses contain an F or control factor. This would indicate an over-emphasis on control. If the percentage of responses on the last three cards exceeds thirty-three per cent, the individual is over-dependent upon outside stimuli. The degree less than thirty-three per cent indicates withdrawal from society. Evalyn's percentage of 29.1 indicates she withdraws very slightly from society and is not overdependent upon environmental stimuli.

There is no indication of stereotypy. The 22.8 per cent of A, or animal responses, are below the average.

THE THEMATIC APPERCEPTION TEST

The following stories were told by Evalyn:

Picture 1

The story:

Poor kid, he's having a time at school—no, it's a violin. His parents want him to take it. The question is whether to do what they want or what he wants. He doesn't take to it right now. He may be daydreaming about whether he will be a great artist. He's thinking of a ball game outside, where he'd rather be. His mother has put him down to practice, but he doesn't want to. It looks like he could do engineering; he might be famous along that line—not a musician. It is rather desolate here. He will probably pick up the violin and practice.

Interpretation:

Leading character—boy

Needs: achievement, belongingness

Reactions to frustrations: abasement

Themas: abasement

Attitude toward environment: dominant

Adequate: no

Ending satisfactory: yes

Picture 2

The story:

It is the well-to-do home of rich people. It's late at night or early in the morning. The maid is up and has heard queer sounds. She got up to investigate. She has a queer feeling as though something has taken place. She opens the door and sees someone lying there. She doesn't want to believe it, but her master has been murdered. She is in suspense; she can't decide whether to tell someone or let someone else find it out. Finally she decides to notify someone else. "This is fun!"

Interpretation:

Leading character: the maid

Needs: affection implied

Reactions to frustration: aggression

Themas: aggression

Attitude towards environment: thwarts

Adequate: yes

Ending satisfactory: yes

The murdered man is apparently her father. She is not adequate in having her needs gratified, therefore the aggression. In that respect she is adequate.

Picture 3

The story:

It looks like a graveyard at night. The man is probably wandering through. Friends have died and are buried here; many people have died and are buried here. Tombstones mark the place where they lie. The man is passing each tombstone, seeing what each has written on it; born, died a certain time. Some were probably famous, some died paupers, some had a full life, some empty. He is reviewing scenes he had with these friends and relatives. He's probably wondering what they are doing; perhaps they are pitying him and have a kind feeling toward him. He wonders what effect he's had on

their lives. He traces the effect they had on his life. He walks out, determined to make something of himself. "I liked that one."

Interpretation:

Leading character: man

Needs: achievement

Reactions to frustrations: aggression

Themas: achievement

Attitude towards environment: thwarts

Adequate: no

Ending satisfactory: yes

The subject has put both friends and relatives in the graveyard, a fact which would be classified as aggression.

Picture 4

The story:

This is a poet who has had it hard; he couldn't get up in the world. He is trying to survive in a cheap New York apartment. The only fresh air he can get is the window he is sitting—setting—sitting in. He's looking up at the sky, wondering what he can write to make himself known quickly. He is trying to get a new inspiration that would be breath-taking if written down. Other poets have been inspired by clouds, stars, moon, and he is bound to find something there; the others have. An idea strikes him; one he never thought of, heard or read of. He wonders if it is a good idea. With determination he sits down, writes, and turns out a masterpiece.

Interpretation:

Leading character: poet

Needs: achievement, recognition

Reactions to frustrations: sublimation

Themas: achievement, recognition

Attitude towards environment: thwarts

Adequate: yes

Ending satisfactory: yes

Picture 5

The story:

There are some parents in time of trouble. The only son is lying on the bed, dying. There are no hopes. The mother's grieved; the father's grieved. Their only consolation is in one another. Their lives are wrapped up in their son. The father is trying to comfort his wife. The son dies, leaving his parents alone and sad. But they find out further in life that it was better that their son was

taken then rather than go through the things the world is facing today.

Interpretation:

Leading character: son

Needs: affection, belongingness

Reactions to frustrations: aggression, compensation, rationalization

Themas: aggression, abasement

Attitude towards environment: the environment is undesirable

Adequate: no

Ending satisfactory: yes

Whenever a child is dead and parents grieve, this is considered aggression against the parents. This is a typical childhood or adolescent wish, "I'll die and they'll be sorry."

Picture 6

The story:

This is a far-away land, unheard-of. Scientists have come to try to raise vegetation to see if humans can survive the heat of the climate. The natives are friendly. The scientists build laboratories. They have learned to like the people, who like them too. The scientists have invented ways for life. When they are at the height of the peak there is an earthquake. It tears down all they worked and struggled for. They still have the determination to go on and take what they have, rebuild, and keep climbing.

Interpretation:

Leading characters: scientists

Needs: achievement

Reactions to frustrations: sublimation

Themas: achievement

Attitude towards environment: thwarts

Adequate: no

Ending satisfactory: yes

Picture 7

The story:

"Is this the right side?" (Laughed) I can't make out what it is. It looks like an arm of a man. A bug is on it. With that in mind, he is sacrificing his life to the betterment of science. A disease has struck the country. Scientists think this bug is a carrier. To prove it, they try it on some human. The man is sacrificed. The bug is the carrier. The scientists must find a cure and prevention. The man has died for humanity.

Interpretation:

Leading character: man

Needs: recognition

Reactions to frustrations: abasement

Themas: recognition, nurturance

Attitude towards environment: harmful

Adequate: no

Ending satisfactory: no

Picture 8

The story:

(Long pause) It looks like an Indian woman to me. Her features might be a painting. This is a hard one. (Pause) Maybe a plague has swept the country. There has been the dying off of children. It was a child's disease. All young children have died. Parents are bewailing the death of their children. This one is holding her child, wondering if it will be next. These parents are telling her to hold him close because she may not be able to hold him in her arms again. Later the child is taken. She is among the parents bewailing the loss of their children.

Interpretation:

Leading character: the baby

Needs: belongingness, affection

Reactions to frustrations: aggression

Themas: aggression

Attitude towards environment: thwarts, harmful

Adequate: no

Ending satisfactory: no

Notice that two "plague" stories occur in succession. This perseverance is common in the telling of these stories.

Picture 9

The story:

It is a room in a wealthy home. The young woman has been called home to have tea, which has been arranged for the young gentleman friend come to town. The maid has prepared tea, with places for two.

The arrival time comes. But the young man doesn't come. Perhaps it is because the couple have had a wreck. They have run into a train, or the train ran into them. Both were killed suddenly. The places are still set awaiting their arrival. It is rather a tragedy.

Interpretation:

Leading character: young woman

Needs: affection
 Reactions to frustrations: abasement
 Themas: sex, abasement
 Attitude towards environment: harmful
 Adequate: no
 Ending satisfactory: no

This indicates a desire for sex but at the same time she destroys it by having the couple killed.

Picture 10

The story:

(She laughed) The old year is going out, the new coming in. It is 1940-'41. '40 is going out, taking with it war, destruction, that it brought. 1941 is bringing in war and destruction. There isn't any outcome as I can see—unless you prophesy 1942 bringing in peace. "These are fun."

Interpretation:

Leading character: Old Year (New Year is prominent)

Needs: sensory gratification (peace)

Reactions to frustrations: anxiety

Themas: aggression

Attitude towards environment: harmful

Adequate: no

Ending satisfactory: yes

The Old Year probably personifies her own struggles, anxieties, frustrations. The New Year being uncertain would personify recovery, peacefulness, overcoming of obstacles.

Picture F 11

The story:

It is a middle-aged woman. She is middle-aged but doesn't want to admit it. She has a terrible feeling toward middle age, as most women do. She wonders what she will look like when she is old. She doesn't want to be old. She pictures herself here. She decides to face facts and be herself.

Interpretation:

Leading character: middle-aged woman

Needs: recognition, achievement

Reactions to frustrations: repression, abasement, anxiety

Themas: abasement

Attitude towards environment: dominates

Adequate: no

Ending satisfactory: yes

Picture F 12

The story:

It is early morning. A maiden is waiting on a bridge to pass the signal of escape to the man she loves, who has been confined to slavery. The lover escapes, probably. The two flee the country. They live happy ever after.

Interpretation:

Leading character: maiden

Needs: affection

Reactions to frustrations: aggression, escape

Themas: sex, autonomy

Attitude towards environment: thwarts

Adequate: yes

Ending satisfactory: yes

Picture F 13

The story:

It is a poor family. There are the mother, daughter, and son. The father has died. There is no income. The mother knows she can't do all the work. She has the hope that all parents have for their son, that he'll be a success. She is willing to sacrifice all she has—body, money to put him through a university. In return he can support her in her old age. Her dream comes true.

Interpretation:

Leading character: son

Needs: recognition, achievement

Reactions to frustrations: compensation, identification

Themas: nurturance, succorance

Attitude towards environment: must work to achieve

Adequate: yes

Ending satisfactory: yes

Oftentimes the sex is reversed. In this case the subject identifies herself with the son. The father is out of the picture; she identifies herself with her mother. Both are of mutual benefit. Any favors must be repaid, however. This corroborates the clinic record in which the father was somewhat incidental in the family set-up.

Picture F 14

The story:

The woman is hiding a secret from her—

(pause) from the man she loves. He, knowing her, suspects she is hiding something. He tries to get it out. She doesn't want to tell because he might not continue to love her. When he pries the truth out, she finds her fears are for nothing. They continue life together—in marriage, probably.

Interpretation:

Leading character: woman

Needs: affection

Reactions to frustrations: anxiety

Themas: blamavoidance

Attitude towards environment: punishes

Adequate: no

Ending satisfactory: yes

This is evidently a father-daughter situation. She is fearful of losing his affection, which he would withhold if she were found guilty.

Picture F 15

The story:

(Stammering very pronounced) A woman has gotten herself mixed up with a man who is not what he should be. She loved him and couldn't break away. The bonds of love held her in its grasp. On one occasion when they met, he drove her to murder. She was so mixed up in love and hate that she didn't know what to do. So she murdered the man. Then (stammer) she realized what she had done. She is grieving, feeling sorry for herself. She is wanting to take back everything she did or said that led up to this. She goes through life with this always on her mind. People she contacts she warns them away from the very thing she once committed.

Interpretation:

Leading character: woman

Needs: affection

Reactions to frustration: aggression, ambivalence, abasement, compensation

Themas: aggression

Attitude towards environment: rejects the environment as undesirable

Adequate: no

Ending satisfactory: no

This ending is considered unsatisfactory because the entire story is one of defeat.

Picture F 16

The story:

It is in Paris. A French spy is getting all the information he can from an Englishman. The Englishman is conscious of this man looking through the window at him. He suspects something—that the Frenchman is a spy trying to work out of him something that would amount to the same as treason. The Englishman turns the trick on the Frenchman. (Stammer) The Englishman wins. He gets information from the Frenchman that leads to (can't find the word I want.)—victory of the English.

Interpretation:

Leading character: French spy; Englishman prominent

Needs: achievement

Reactions to frustrations: abasement

Themas: achievement, abasement

Attitude toward environment: mysterious, punishes

Adequate: no

Ending satisfactory: no

Stories of curiosity are frequent in the Thematic Apperception Test. In this instance the subject is punished for it. This is purported to relate to childhood curiosity over her environment, herself, and particularly over sexual matters.

Picture F 17

The story:

Two women have had a fight. One married the man. Both are jealous. The one knowing he is married, tries to gain his love. She tries to get the wife out of the picture. The wife suspects something wrong. She tries to find out who the other woman is. She finds out. By accident the two meet; Fate plans it. The wife takes it on herself to kill the other woman. She finds this woman would be better for the man she loves than she would herself. For the man's sake she fades out of the picture.

Interpretation:

Leading character: the other woman; wife prominent

Needs: affection

Reactions to frustrations: aggression

Themas: sex, aggression

Attitude towards environment: environment submits

Adequate: yes

Ending satisfactory: no

This is a frequent type of story in which two women are rivals for the same man. In terms of the dynamics used in these interpretations, the "other woman" is Evalyn herself, who is a rival of her mother for the father.

Picture F 18

The story:

It is a wealthy home. The maid's mistress is having a caller, famous in town and well liked. The maid, being poor and not having the opportunity hoped for, takes advantage of the situation and flirts with the caller. She gets a date. She marries him. Since life's very queer, they live happily together.

Interpretation:

Leading character: the maid

Needs: affection

Reactions to frustrations: none

Themas: sex

Attitude towards environment: environment submits

Adequate: yes

Ending satisfactory: yes

Picture F 19

The story:

Two men are in love with the same woman. (stammer) She only marries one; one she loves. He doesn't treat her well. The other man, who is the loser (stammer), can't stand to see one he loves a-bused. He sets out to kill the other man. He succeeds in killing, at the same time breaking the heart of the woman he loved. He finds the woman he loved and the man he hated dead. He ends his life in suicide; he takes poison. "These are fun!"

Interpretation:

Leading character: woman; two men prominent

Needs: affection

Reactions to frustrations: abasement

Themas: sex, aggression, abasement

Attitude towards environment: rejects the environment as undesirable.

Adequate: no

Ending satisfactory: no

The man who kills the lover is probably her father. Another instance

where the heroine and her lover die.

Picture F 20

The story:

An old man is setting alone. He is looking back on young days, school days, thinking of the woman he loved and who is now gone. He thinks of friends, good times, good things in his life. He thinks of how much he was liked. Now that he is old he is put on a shelf and forgotten. He has wisdom, knowledge. He's been through life and knows it. He tries to keep people from making the same mistakes he did. They scoff, call him old-fashioned. He consoles himself—when he is dead and gone they'll know what he said is true.

Interpretation:

Leading character: old man

Needs: belongingness, recognition, affection

Reactions to frustrations: escape (day-dreaming), aggression

Themas: recognition, aggression

Attitude toward environment: friendless

Adequate: no

Ending satisfactory: no

These evaluations having been made in terms of the "projection techniques," reveal the following data:

<i>Needs Expressed</i>	<i>Total Responses</i>
achievement	7
affection	11
belongingness	4
recognition	5
sensory gratification	1
<i>Reactions to frustrations</i>	
abasement	7
aggression	8
ambivalence	1
anxiety	3
compensation	2
escape	2
repression	1
sublimation	2
<i>Adequate</i>	
no	14
yes	6
<i>Ending satisfactory</i>	
no	8
yes	12

<i>Themes</i>	<i>Total Responses</i>
abasement	6
achievement	4
aggression	8
autonomy	1
blamavoidance	1
nurturance	2
recognition	3
sex	4
succorance	1
<i>Attitude towards environment</i>	
dominates	2
friendless	1
harmful	3
helpful	1
mysterious	1
punishes	2
submits	2
thwarts	6
undesirable	3
work required	1

The above information indicates that Evalyn's most important need is for affection. Clinical findings substantiate this adequately. Her father is rather advanced in years. He reads a great deal and is rather non-communicative. Her mother tends to be hypochondriacal and concerned over her own self. The girl has been prohibited having a normal association with boys. She indicates her desire for affection, love, and sex; yet she fears or rejects it in various ways; her master is murdered (story two); she and her lover are killed (story nine); she fears disapproval (story fourteen); she kills her lover (story fifteen); she takes him away from another woman but is almost killed for doing it (story seventeen); she dies of a "breaking heart" after her lover is killed (story nineteen). Only in three instances is she successful in affectional needs (stories twelve, fourteen, eighteen). She also indicates a need for achievement, with recognition and belongingness next in importance.

Aggression stories were prominent, particularly where the hero or heroine

died, leaving the parents to mourn. The Harvard studies (64) found that in both college students and in children between ages eight and fourteen years aggression tended to be the most intense need. Evalyn also fits into the trends found at Harvard in which there were strong needs also for achievement and affiliation (categorized as belongingness in this study). Abasement, or self-punishment, was evident in several instances where aggression or desire for achievement or sex were punished, as in stories nine, sixteen, seventeen, and nineteen.

Her environment is more thwarting than helpful. Although the leading character is inadequate in fourteen of the stories, in six instances this inadequacy is overcome and the stories end satisfactorily.

Summary

A review of all these approaches to Evalyn's personality indicates that there is considerable consistency insofar as they are comparable.

INTELLECTUAL SUMMARY

Evalyn would not be considered superior in intellect, as evidenced by the first decile on Henmon-Nelson, third percentile on thinking introversion in Inventory of Factors S T D C R low productivity (6.3%) of W (whole) responses (indicative of abstract thinking) and 72.2 per cent for F or form responses.

EMOTIONAL SUMMARY

Evalyn is not introvertive, as indicated by the S and T factors in the Inventory of Factors S T D C R, and the low number of M's on the Rorschach. The extrovertive tendencies on the S T D C R, thirty-eighth percentile, are

not as indicative of extrovertiveness as are the sum C's on the Rorschach. Her predominant need for affection in the Thematic indicates a dependence upon her outside environment.

Her high control (F) factor on the Rorschach might be considered compatible with her self-punishment after aggression on the Thematic.

The depression tendencies in the S T D C R Inventory are reflected in inadequacy feelings shown in the Thematic, in which fourteen out of twenty characters are inadequate. However, her equal amount of happy-go-lucky (R factor) tendencies balance the depression and are exemplified in her

hopefulness, as expressed in satisfactory endings in a ratio of twelve to eight.

Thus, a brief personality summary of this girl would be: an individual with above average but not superior intelligence, predominately extrovertive, but restricted, and needing more affection and achievement than she is getting. The stories indicate a desire for aggression as a reaction to her frustrations but it is counterbalanced by abasement resulting from feelings of guilt which prevent the direct expression of her aggression. One might assume that her stuttering, then, is her disguised reaction to her frustrations in getting affection and in achieving.

CHAPTER VI

RESULTS OF THE EXPERIMENT

THE RESULTS of this study have been considered from a quantitative viewpoint insofar as the tests would permit. Since the types of tests used differ so greatly, the use of a common statistical method of interpreting the results was not feasible. The questionnaire test is amenable to statistical treatment by the method of averages. This method, as well as comparisons of proportions of responses, has also been used with the Rorschach Test results. Proportions have been used in interpreting the Thematic Test findings statistically.

AN INVENTORY OF FACTORS S T D C R

The averages for this inventory for the stutterers and non-stutterers have been compared and the results are shown in raw scores, means, standard deviations,

TABLE 3

Mean raw scores, standard deviations, and critical ratios for stutterers and non-stutterers on an inventory of factors S T D C R

	Stutterers		Non-stutterers		CR _{mean}
	Mean	S.D.	Mean	S.D.	
S	28.53	12.30	20.53	9.42	2.79
T	38.53	9.83	35.73	10.35	1.05
D	28.80	14.01	20.40	11.48	2.49
C	31.87	13.79	26.47	12.94	1.53
R	30.47	11.92	40.47	11.87	3.21

and critical ratios of the mean in Table 3. The raw scores have been changed into percentile ranks as per the norms of the test manual (62). A comparison of the two groups in terms of percentiles is shown in Table 4.

The critical ratios in Table 3 indicate that the stutterers show fairly significant differences from the non-stutterers in the S factor. They tend to be more shy and

withdrawn from social contacts. A critical ratio of 2.79 is fairly certain (11, p. 61). Likewise is the CR of 2.49 for the D (depression) factor. The most significant difference is found in the R or

TABLE 4

Percentile ratings for stutterers and non-stutterers on the inventory of Factors S T D C R

Factors	Stutterers	Non-stutterers
S	80	60
T	58	49
D	69	49
C	59	44
R	24	45

happy-go-lucky factor with a CR of 3.21. One may conclude that the stutterers are more socially introverted, more depressed, and less happy-go-lucky than the non-stutterers. The two groups do not differ significantly in thinking introversion (T factor) which may be philosophizing, analyzing oneself and others, or daydreaming. Neither do they differ significantly in cycloid tendencies (C factor), which indicates strong emotional reactions, fluctuations in mood, and tendencies toward instability.

A percentile rating of forty to sixty is considered within the average range for normals. An examination of Table 4 shows the non-stutterers are within this range in all the factors while the stutterers are in excess of the sixtieth percentile in social introversion and depression. They are considerably below the average in happy-go-lucky disposition.

THE RORSCHACH INK-BLOT TEST

This test has not been sufficiently validated to permit satisfactory statistical treatment. A group study presents prob-

lems which concern zero scores, small distributions, extreme scores, and interdependence of the various categories which make up the total Rorschach psychogram. For example, a high *M* (indicative of inner control) score means

There are several skewed distributions of scores, for example, the *d* responses for stutterers, and *Dd* responses for non-stutterers, which have been included in Tables 5 and 6, because the range was sufficient enough for comparison.

TABLE 5
Rorschach differences between stutterers and non-stutterers in terms of means

	Means Stutterers	Means Non-stutterers	Diff.	S.E. of Diff.	CR
W	8.33 ± .95	8.73 ± 1.07	.40	1.43	.28
D	26.93 ± 3.22	24.00 ± 1.85	2.93	3.71	.79
d	4.80 ± 1.94	7.90 ± .88	3.10	2.13	1.46
Dd	8.26 ± 2.66	3.40 ± .54	4.86	2.71	1.79
S	2.50 ± .58	2.63 ± .67	.13	.89	.15
Res.	54.33 ± 7.61	45.67 ± 3.46	8.66	8.36	1.04
M	3.98 ± .87	3.13 ± .48	.85	.99	.86
FM	5.77 ± 1.03	4.13 ± .71	1.64	1.25	1.31
F	36.33 ± 4.73	29.33 ± 2.86	7.00	5.53	1.27

Legend: Diff. indicates difference. Res. indicates responses.

one thing when there are no *C* (indicative of impulsivity) responses, and has another significance when some *C* appears, and still another when *C* equals *M* (37). It is difficult to find a statistical method for group comparisons which will consider these problems.

Upon utilizing both the method of averages and the method wherein proportions of responses for the stutterers and non-stutterers were compared, the investigator found that they both had limitations and advantages. As a result, both approaches have been included in this study in order to present as accurate a comparison of the two groups as these methods will permit.

The findings on the method of averages will be considered first. There are several categories in the Rorschach Test which had a distribution range too small and zero scores too large to merit being tabulated. They will be discussed from the standpoint of range and zero scores but not in terms of means, medians, standard deviations, or critical ratios.

The means were determined in the following manner: All responses of individuals were scored under the category to which they belonged. For example, all responses which used the whole ink-blot for interpretation were scored *W*. The total number of *W*'s for each individual was determined, whether the number was zero, one, two, or seven. Zero was counted as a score as well as one or two. The mean was determined from these scores.

A consideration of the differences between stutterers and non-stutterers in terms of means as presented in Table 5 shows no significant differences between them in any of the categories. The means are affected by the extreme distributions; therefore, the medians are included in Table 6. In this table there is one significant difference in medians shown, that for the *d* or small detail category. An extremely high score for stutterers raised the mean, and the large number of cases (seventy per cent) having 0 to 1 response kept the median low. Both

TABLE 6
Rorschach differences between stutterers and non-stutterers in terms of medians

	Stutterers	Medians Non-stutterers	Diff.	S.E. of Diff.	CR
W	7.12 ± .61	7.00 ± 1.37	.12	1.50	.08
D	24.80 ± 2.19	22.29 ± 1.56	2.51	2.69	.93
d	1.43 ± .26	6.33 ± .91	4.90	.95	5.16
Dd	2.00 ± 1.37	2.60 ± 1.10	.60	1.76	.34
S	1.00 ± .91	1.80 ± .55	.80	1.06	.75
Res.	43.33 ± 9.13	42.50 ± 3.42	.83	9.75	.09
M	2.33 ± .46	2.38 ± .34	.05	.57	.09
FM	3.00 ± 2.74	3.33 ± .46	.33	2.78	.12
F	27.14 ± 3.91	26.67 ± 3.04	.47	4.95	.09

Legend: Diff. indicates difference. Res. indicates responses.

measures of central tendency (the mean and median) do not show significant differences for the *d*. The reason why there is a significant difference for the median and not the mean is because the skewed distribution influenced the value of the mean in the *d* category.

A consideration of the critical ratios for difference in dispersion in Table 7 indicates the stutterers tend to be significantly more variable than the non-stutterers for categories *D*, *d*, *Dd*, *M*, *F*, and number of responses. They were most similar in their responses to whole blots (*W*) and to white space (*S*) as indicated by the critical ratios of .64 and .76.

The remaining categories in the Rorschach Test yielded results which have been found too insignificant for statistical consideration by the method

of averages and are presented in Table 8. In this table the zero scores and the range of responses for each category are indicated in order to show the impossibility of adequately comparing the two groups. For example, none of the control group responded to *c* (a shading response), both groups had twenty-five zero responses to *K* (another shading response). Neither the stutterers nor the control group gave a sufficient number of responses to the shading (*k*, *K*, *FK*, *Fc*, *c*, *C'*) or color (*FC*, *CF*, *C*) to make a statistical comparison possible on the basis of averages.

One may conclude from the data presented in Tables 5 to 8 that the stutterers do not differ significantly from the non-stutterers in the average number of responses to each category in the

TABLE 7
Rorschach differences between stutterers and non-stutterers in terms of standard deviations

	Standard Deviations Stutterers	Standard Deviations Non-stutterers	Diff.	S.E. of Diff.	CR
W	5.12 ± .67	5.77 ± .76	.65	1.01	.64
D	17.36 ± 2.28	9.95 ± 1.31	7.41	2.62	2.83
d	10.42 ± 1.37	4.72 ± .62	5.70	1.50	3.80
Dd	14.30 ± 1.88	2.89 ± .38	11.41	1.92	5.94
S	3.14 ± .41	3.61 ± .47	.47	.62	.76
Res.	40.98 ± 5.38	18.61 ± 2.44	22.37	5.91	3.79
M	4.68 ± .61	2.56 ± .34	2.12	.70	3.03
FM	5.55 ± .73	3.83 ± .50	1.72	.88	1.95
F	25.46 ± 3.34	15.42 ± 2.03	10.04	3.91	2.57

Legend: Diff. indicates difference. Res. indicates responses.

Rorschach Test excepting in the *d* category. There is a significant difference in medians but not for both measures of central tendency and since there is extreme skewness in the distribution of *d* for stutterers, the difference in this category is not as important as it would have been had both mean and median differences been significant. There is a difference in dispersion in *D*, *d*, *Dd*, *M*, and total number of responses. There was a fairly significant difference in dispersion of the *FM* and *F* categories.

The other statistical approach has been to determine the proportion of responses for each category for stutterers and to compare them with those of the non-stutterers in order to determine whether there were significant differences in the proportions. For example, the stutterers had 1,627 responses of which 233 or 14.3 per cent were *W*'s, 794 or 48.8 per cent were *D*'s, 310 or 19.1 per

TABLE 8
Number of individuals making zero responses and limited ranges of responses on the Rorschach ink-blot test

	Zero Responses		Range of Responses	
	Stutterers	Non-stutterers	Stutterers	Non-stutterers
m	16	13	0-4	0-7
k	16	19	0-8	0-4
K	25	25	0-3	0-1
FK	15	19	0-9	0-9
Fc	8	7	0-14	0-6
c	28	30	0-1	0-0
C'	23	25	0-2	0-2
FC	12	9	0-11	0-6
CF	18	12	0-4	0-6
C	18	12	0-11	0-5

These Rorschach categories are not amenable to statistical comparison by the method of averages.

cent were *d*'s, 230 or 14.1 per cent were *Dd*'s, and 60 or 3.7 per cent were *S*'s. Table 9 shows the total responses in each category, the per cent, the standard error of per cent, and critical ratios for stutterers and non-stutterers.

TABLE 9
Total responses, percentage of responses, standard errors of percentage, and critical ratios for stutterers and non-stutterers on the Rorschach ink-blot test

	Total Responses		Per cent		S.E. of Per cent	CR
	Stutterers	Non-stutterers	Stutterers	Non-stutterers		
W	233	249	14.3	18.9	9.5	.48
D	794	707	48.8	53.8	12.8	.39
d	310	207	19.1	15.7	9.8	.33
Dd	230	87	14.1	6.6	7.8	.96
S	60	64	3.7	4.8	3.8	.31
M	118	79	7.3	6.0	6.4	.19
FM	158	109	9.7	8.3	7.4	.19
m	25	45	1.5	3.4	4.0	.48
k	30	17	1.8	1.3	3.2	.17
K	9	5	0.6	0.4	1.7	.10
FK	38	25	2.3	1.9	3.7	.12
F	1,071	848	65.8	64.5	12.3	.10
Fc	46	51	2.8	3.9	4.6	.23
c	2	0	0.0	0.0	0.0	.00
C'	9	6	0.6	0.5	1.8	.55
FC	64	52	3.9	4.0	1.4	.02
CF	21	38	1.3	2.9	3.6	.44
C	36	39	2.2	3.0	4.1	.18
Grand total	1,627	1,314				
A+Ad	662	607	40.7	46.2	12.7	.43
H+Hd	291	182	17.9	13.9	9.4	.42

Table 10 shows interiority and exteriority in the two groups as shown by proportions of responses to *M* (indicating interiority) and *C* (indicating exteriority). The only significant difference is in the proportion of stutterers who

TABLE 10
Percentage of stutterers and non-stutterers responding to measures of interiority and exteriority on the Rorschach test

	Per cent Stut- terers	Per cent Non-stut- terers	Diff.	CR
No <i>M</i> or <i>C</i>	23.3	6.6	8.9	2.8
$M - C \leq 1$	0.0	6.6	0.0	0.0
$C > M$	13.3	23.3	9.9	1.0
$M = C$	10.0	3.3	6.3	1.1
$M > C$	53.3	60.1	13.9	.48

made no *M* or *C* responses. A percentage of 23.3 saw neither *M* nor *C* while only 6.6 per cent of the non-stutterers were devoid of both these responses. The ratio of *M* to *C* is the ratio of the tendency towards inner living as expressed by *M* versus impulsive reaction to outside stimuli as expressed by *C*. An absence of both of these responses for the stutterers tends to indicate that they do not recognize their inner promptings, neither do they impulsively respond to outside stimuli in as large proportions as do the non-stutterers.

Rorschach used the terms "popular" (*P*) and "original" (*O*) to differentiate the unusual from the usual in response. If an individual had a large number of *O*'s, it was indicative of creative superior ability. An original response is one which does not appear more than once in a hundred records. However, Klopfer and Kelley (15, p. 181) maintain that even though an examiner has computed his first set of one hundred records, he can not be too sure about the original responses. Original responses from a heterogeneous group might cease to be

so within a group similar as to personality to the one subject who produced this response. These authors maintain (15, p. 216):

There is not yet enough statistically valid evidence to make definite statements about the significance of the number of popular responses. This factor seems to reflect one of the more peripheral elements in the personality structure, and one which is more subject to change in the test experiments than many other factors.

Since there is so much indefiniteness concerning these two categories, and since their significance is not determined, they have been omitted from this investigation as unessential details.

One may conclude from the data presented in the tables that there are significant differences between these stutterers and non-stutterers as they responded to the Rorschach Ink-blot Test in dispersion and in the proportion of responses where there were no *M* and *C*. In this instance stutterers showed significant lack of recognition of inner promptings and indicate that they do not respond impulsively to outside stimuli.

THE THEMATIC APPERCEPTION TEST

Statistical procedures for evaluating this test have not been universally determined. An investigator who desires to use some type of measurement is left to his or her own devices. The Harvard Psychological Clinic has a data sheet which is used for evaluating the stories from the standpoint of "needs" of the individual and the "press" of his environment. Since this investigation was concerned with a somewhat different approach, the stories were evaluated for needs, reactions to frustrations, themes, attitude towards the environment, adequacy of the central character, and end-

TABLE 11

Total responses and percentage of needs of stutterers and non-stutterers as expressed in the thematic apperception test stories

	Total Responses		Per cent		S.E. of per cent	CR
	Stutterers	Non-stutterers	Stutterers	Non-stutterers		
Achievement	275	261	44.9	50.4	12.8	.42
Affection	141	135	23.0	26.1	11.7	.26
Belongingness	94	63	15.4	12.2	8.8	.36
Recognition	65	24	10.6	4.8	6.8	.85
Sensory Gratification	37	34	6.1	6.5	6.2	.06
Total Needs	612	517				

ings. If, for example, in the interpretation of a given story there is an indication of a need for achievement in a story as well as a need for recognition, both needs are listed. If more than one reaction to frustration were expressed, these were all recorded. A value of one was given to each category.

Table 11 shows a comparison of the stutterers and control group for needs expressed. There is no significant difference between them, all of the critical ratios being below 1.0. In fact, no significant differences were found in any of the categories in which the stutterers

were compared with the non-stutterers. In Table 10 the greatest need was for achievement and the next in importance was for affection. In both these instances the control group showed a larger proportion than did the stutterers. The stutterers had slightly more need for belongingness and considerably more need for recognition than did the non-stutterers.

Table 12 shows that the largest proportion of reactions to frustrations in order of size are abasement (self-punishment), aggression, and escape. The non-stutterers exceed the stutterers in abasement and aggression.

TABLE 12

Total responses and percentage of reactions to frustration by stutterers and non-stutterers in the thematic apperception test stories

	Total Responses		Per cent		S.E. of per cent	CR
	Stutterers	Non-stutterers	Stutterers	Non-stutterers		
Abasement	134	150	23.1	29.2	11.3	.55
Aggression	102	105	17.6	20.5	10.1	.28
Ambivalence	10	15	1.7	2.9	3.8	.32
Anxiety	56	58	9.6	11.3	7.9	.21
Compensation	8	3	1.4	0.6	2.5	.32
Conversion	23	10	4.0	3.7	4.9	.05
Escape	79	66	13.6	12.9	8.7	.08
Fear	8	14	1.4	2.7	3.6	.37
Identification	21	14	3.6	2.7	4.5	.20
Insanity	3	4	0.5	0.8	2.1	.12
Introjection	25	16	4.3	3.1	4.8	.24
Rationalization	13	4	2.2	0.8	3.1	.47
Reaction Formation	6	1	1.0	0.2	2.0	.42
Regression	15	9	2.6	1.8	3.7	.22
Repression	39	21	6.7	4.1	5.8	.48
Sublimation	39	14	6.7	2.7	5.4	.74
Grand Total	581	513				

The themas in Table 13 show the largest proportions for both groups in abasement, achievement, aggression, and sex. The rank order for stutterers is: achievement, abasement, aggression, and sex. The rank order for the control group is: abasement, achievement, sex, and aggression.

Table 14 shows the proportions of

Thus the stutterers find their environment more thwarting, dominating, and punishing than the control group which finds the environment almost equally submissive and thwarting and undesirable to the extent that it is to be rejected.

Table 15 shows that the stutterers tend toward making the characters in their

TABLE 13
Total responses and percentage of themas for stutterers and non-stutterers in the thematic apperception test stories

	Total Responses		Per cent		S.E. of per cent	CR
	Stutterers	Non-stutterers	Stutterers	Non-stutterers		
Abasement	134	130	16.9	19.1	9.9	.22
Achievement	142	129	17.9	18.1	9.9	.02
Acquisition	18	9	2.3	1.3	3.4	.27
Affiliation	40	44	5.0	6.4	5.9	.23
Aggression	90	66	11.3	9.7	7.9	.20
Autonomy	55	31	6.9	4.6	5.9	.40
Blamavoidance	7	4	0.9	0.6	2.2	.13
Blamescape	4	2	0.5	0.3	1.7	.12
Deference	5	8	0.6	1.2	7.1	.07
Dominance	25	18	3.1	2.6	4.3	.12
Excitance	10	4	1.3	0.6	2.4	.28
Exhibition	2	1	0.3	0.1	1.1	.10
Harmavoidance	25	14	3.1	2.1	4.1	.26
Inviolacy	20	37	2.5	5.4	1.6	1.82
Nurturance	6	11	0.8	1.6	2.7	.36
Nutriance	8	2	1.0	0.3	2.1	.34
Passivity	21	16	2.6	2.4	4.0	.06
Play	2	2	0.3	0.3	1.3	.03
Recognition	25	18	3.1	2.6	4.3	.12
Rejection	4	9	0.5	1.3	2.4	.34
Seclusion	7	8	0.9	1.2	2.6	.1
Sentience	9	8	1.1	1.2	2.7	.01
Sex	82	72	10.3	10.6	7.8	.03
Succorance	54	37	6.8	5.4	6.2	.21
Grand Total	795	680				

responses indicative of attitudes toward environment. The five categories receiving the largest proportions, arranged in rank order from more to less, for stutterers are: the environment thwarts, it punishes, it dominates, it is harmful, it is helpful. The rank order of the five largest proportions for non-stutterers is: the environment is submissive, it thwarts, it is undesirable and is to be rejected, it punishes, and it dominates.

stories inadequate more often than adequate—a proportion of 40:60; while the non-stutterers' characters show adequacy slightly more than half the time. Both groups indicate a hopeful outlook, however, when more than half the stories end satisfactorily.

Other features in the Thematic Apperception Test stories were analyzed, such as situations in which people were dead or dying. Oftentimes members of

TABLE 14

Total responses and percentage of attitudes of stutterers and non-stutterers towards their environment as expressed in the thematic apperception test stories

	Total Responses		Per cent		S.E. of per cent	CR
	Stutterers	Non-stutterers	Stutterers	Non-stutterers		
Dominates	67	56	11.0	9.6	7.8	.17
Friendless	34	30	5.6	5.2	5.8	.07
Harmful	61	57	10.0	9.8	7.7	.02
Helpful	58	51	9.6	8.8	7.5	.10
Loving	27	40	4.4	6.9	5.9	.42
Monotonous	12	7	2.0	1.2	3.2	.24
Mysterious	16	9	2.7	1.6	3.7	.30
Pleasant	32	33	5.3	5.7	5.8	.07
Punishes	81	58	13.3	10.0	8.2	.40
Recognizes	6	7	0.9	1.2	2.7	.08
Submissive	52	78	8.6	13.5	8.0	.61
Thwarting	91	76	14.9	13.1	8.9	.21
Undesirable	44	60	7.2	10.3	7.3	.42
Work required	26	17	4.3	2.9	4.8	.07
Grand Total	607	579				

the family or friends had died. There were fifty-five such instances in the stories told by the stutterers and fifty-three such instances indicated by the non-stutterers. There were stories of murder or punishment by society in which the hero was put to death because of a crime. The stutterers gave forty-two and the non-stutterers gave twenty-six such stories. The control group gave almost twice as many suicide stories as the stutterers, the proportion being 18:11.

SUMMARY

The test data reveal these stutterers to be significantly different from the non-stutterers in social introversion, depres-

sion, and happy-go-lucky tendencies as indicated by the Inventory of Factors S T D C R.

The significant differences in the Rorschach factors were in dispersion and in the proportion of no *M* and *C* responses. The stutterers were inclined not to recognize their inner promptings or to respond impulsively to their outside environment.

Rorschach set up norms which have been used by the various Rorschach workers. Vernon (56, p. 180) includes a table, Bochner and Halpern (4, p. 86) and Klopfer and Kelley (15) discuss these norms. An interpretation of these stutterers' personality as revealed by the Rorschach Test may be made by com-

TABLE 15

Percentage of times characters were adequate and endings satisfactory in stories told by stutterers and non-stutterers in the thematic apperception test

	Per cent		Per cent	Per cent		S. E. of Per cent
	Adeq.	Inadeq.		Satis.	Unsatis.	
Stutterers	40.1	59.9	12.7	54.0	46.0	12.8
Non-stutterers	51.3	48.7		58.7	41.3	

Legend: Adeq. indicates adequate. Inadeq. indicates inadequate. Satis. indicates satisfactory. Unsatis. indicates unsatisfactory.

paring their responses with the norms for the test.

The manner in which the individual chooses his blot areas is hypothesized to indicate the manner in which he approaches his every-day problems. The average person has the following proportions of location categories (15, p. 258):

W	D and d	Dd and S
25-30%	50-67%	10%

The stutterers had these proportions: W-14%, D and d-68%, Dd and S-18%. Thus, the stutterers placed more emphasis upon normal details than to the whole blot and saw more minute details than the average normal.

Rorschach's norms indicate that the average person sees two to four *M*'s and zero *C*'s. These stutterers would be in this group with a mean of 3.98 *M*'s. Since eighteen, or over half the group, saw no *C*'s, this is an indication that they would be in the normal average group for this category. When *F* per cent exceeds fifty, that is an indication of increased repression. If the *F* per cent is seventy or above, there may be compulsive traits. The stutterers had an *F* per cent of 65.8 which would place them in the constricted group.

Animal responses are indicative of stereotypy. More intelligent persons tend to have fewer *A*'s. Rorschach's norms indicate the average person to have from 30-55 per cent of *A*'s. The stutterers' *A* per cent of 40.7 places them in this group.

Thus, a summary of the stutterers' traits as determined by the Rorschach norms shows them tending to be more detailed in their approach to problems; they have an average amount of inner living; they are average in their stereotypy, they are more constricted than the average, and they tend not to respond impulsively to outside stimuli.

The Thematic Apperception Test reveals them to have a desire for achievement in excess of other needs and also a desire for affection. They are inclined to feel guilty and punish themselves, they react aggressively to frustration, their environment thwarts, punishes, and dominates in excess of being helpful, loving, or monotonous, and gives little recognition. They tend to show less adequacy in their story characters and give less proportions of happy endings than does the control group. However, there was no significant statistical difference between the groups in the Thematic Apperception Test findings.

CHAPTER VII

SUMMARY AND CONCLUSIONS

IN THIS study of the personality of adult stutterers thirty subjects (twenty-two male and eight female) were matched with a control group for age, sex, college experience, and decile rating for mental ability. There was person for person matching for age, sex, and college experience and a group matching for decile ratings.

Four tests were administered: The Henmon-Nelson Tests of Mental Ability, Form A, An Inventory of Factors S T D C R, The Rorschach Ink-blot Test, and the Thematic Apperception Test. The results of the Inventory of Factors S T D C R were determined by a scoring key. The scoring on the Rorschach Test followed chiefly the method of Klopfer and Kelley (15), and the interpretations were based upon those of Beck (1), Bochner and Halpern (4), Hertz (34, 35, 39), and Klopfer and Kelley. The evaluations on the Thematic Apperception Test followed the methods of Murray (18) and Travis and Baruch (21).

The stuttering and control groups were compared on the basis of the results of the three personality tests. On the Inventory of Factors S T D C R there were significant differences in factors S, D and R. The stutterers were more socially introverted, more depressed, and less happy-go-lucky than the non-stutterers.

The Rorschach Test results were not entirely amenable to statistical treatment. In categories (W, D, d, Dd, S, M, FM, F, and total responses) where means, medians, standard deviations, and critical ratios could be determined there was significant difference between the stut-

terers and non-stutterers in the medians for small detail (d). There were no significant differences in means. There were significant differences in the dispersion of the two groups in categories D, d, Dd, M, F, and total number of responses. The stutterers were more variable than the control group. In proportion of responses on the Rorschach Test, the only significant difference found was in the instance where there were no *M* (movement) and no *C* (color) response. The stutterers tended not to recognize their inner life and not to respond impulsively to their outer environment.

In the Thematic Apperception Test results there were no significant differences in the proportions of needs, reactions to frustrations, themes, attitudes toward environment, adequacy of the central character, and satisfactory or unsatisfactory endings. Both groups had greater needs for achievement and affection than for belongingness, recognition, or sensory gratification. When frustrated, both groups tended to show guilt feelings as indicated by self-punishment (abasement); aggression, and withdrawing tendencies (escape). The most predominant themes for both the stutterers and control group were: achievement, abasement, and aggression. The stutterer's environment, in order of importance, was more thwarting, punishing, and dominating, while the non-stutterer's environment was almost equally submissive and thwarting, and also undesirable and punishing. The leading characters in the stutterer's stories were adequate forty per cent of the time as compared with fifty-one per cent for the control group. However,

there were no significant differences in this category or in satisfactory endings.

The results of the findings on the Inventory of Factors S T D C R are in agreement with some of Johnson's (14) findings on the Woodworth-House Mental Hygiene Inventory. He found, as did this study, that stutterers tend toward shyness and depression. Bender's study (2, 27) on college male stutterers is in agreement with this study in that stutterers are more introverted than non-stutterers.

The facts that there were no significant differences in the Rorschach Test results except in dispersion in the medians for small detail, and in lack of *M* and *C* responses, and that no difference appeared in the case of the Thematic Apperception Test, is incompatible with the findings on the Inventory S T D C R. This result, perhaps, can be accounted for in several ways. Both the Rorschach and Thematic Apperception Tests are designed for individual rather than for group analysis. Psychoneurotic tendencies on the Rorschach are better discovered in each individual case as the test is given. Many of these tendencies are not measurable quantitatively on a group basis. For example, it is difficult to measure refusal of cards, delays in responses, decline in the number of responses to the color cards, and exclamations about the color in the blots so far as a group study is concerned. These nuances are important in connection with the interpretation of individual results but are lost in the process of quantitative analysis of group results.

There were a number of individuals in the stuttering group who showed psychoneurotic tendencies on the Rorschach Test. For example, one reacted with a total of twenty-one responses and all

were of an *F* or form nature. Such a pattern indicates extreme constriction and tendencies toward compulsion traits. The case was very unique from an individual standpoint but was obscured in its significance when added to the group results. Similar instances of unusual frustrations and attitudes occurred in the Thematic Apperception Test stories. Autobiographical material was given which was significant for individual findings but not for the group.

From a clinical standpoint, projection tests are valuable instruments for detecting individual anxieties, constrictions, infantile emotional reactions, and lack of inner and outer control (Rorschach Test); and for discovering basis needs, frustrations, attitudes toward the family or environment in general, and autobiographical material (Thematic Apperception Test). These qualitative analyses are helpful in the field of speech correction for stutterers. For this reason a detailed case study will be found in Chapter V. In this study of a girl stutterer the results of the Inventory of Factors S T D C R, the Rorschach and Thematic Apperception Tests were analyzed and compared. These tests have been found helpful, not only because they furnish a picture of the general stage of personality development at the time they were given, but also because apparent underlying mechanisms of personality were revealed which perhaps were not observable by means of other diagnostic tools.

Although neither the Rorschach Ink-blot nor the Thematic Apperception Tests are designed to reveal group tendencies adequately, and although they have limitations as far as validity, reliability, and adequacy of norms are concerned, and although their value as a diagnostic instrument depends in a

large measure upon the skill of the examiner, these limitations do not necessarily vitiate their results. Their purpose is not to take the place of objective tests or other clinical methods, but to supplement and clarify their findings.

Further research is needed upon the Borschach Ink-blot and the Thematic Apperception Tests to render them more amenable to group analyses. The Rorschach Test has been made into a group test (33) but the latter instrument has not been studied sufficiently to determine its significance. In evaluating stories of the Thematic Apperception Test it was found that the stories for each picture tended to show definite trends. For example, in Picture 1 the boy with the violin had been told to practice, and he practiced or did not; he wanted to be a great artist, and he either became one or he did not. Perhaps, a multiple choice test could be devised which would allow the subject to select the various dynamics for his plot and thus to reveal his needs, frustrations, attitudes, and adequacies.

Another study could be made a year after having given the first tests. For example, the questionnaire and the two projection tests could be administered to stutterers as they enter a clinic or speech correction class and then re-administered at the close of the term. The results could be compared, similarities and differences noted for each individual. This would be a valuable check upon personality changes which may have taken place. There would be no definite way of determining to what extent the therapeutic procedures may have influenced change in the personality pattern of the individual, but at least the clinical instruments would indicate whether there were changes.

Until further research is done upon the Rorschach and the Thematic Apperception Tests, investigators are limited in their use in group studies because of their many unmeasurable qualitative values. Their values lie in using them for individual cases where the interdependence of all these factors have meaning.

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